

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

A NEW SPECIES OF *SPHAERODACTYLUS*
(SAURIA: GEKKONIDAE) FROM HISPANIOLA

BY ALBERT SCHWARTZ AND RICHARD FRANZ
Miami-Dade Community College North,
Miami, Florida 33167, and
Florida State Museum, University of Florida,
Gainesville, Florida 32611

Among the Hispaniolan species of *Sphaerodactylus*, *Sphaerodactylus copei* Steindachner is one of the most distinctive. It reaches a snout-vent length of 42 mm; has very much enlarged and almost boss-like dorsal scales in contrast to much smaller, smooth ventral scales; a middorsal zone of tiny granules; and four supralabial scales to the center of the eye. The females are brightly patterned in contrast to generally more drab and unpatterned males (Schwartz, 1975). Nine subspecies of *S. copei* are now recognized. The species is restricted to the Haitian Tiburon Peninsula and to Ile de le Gonâve, Ile Grande Caymite, and Ile-à-Vache. *S. copei* has never been recorded from the República Dominicana (where it is expected in the Valle de Neiba, the eastern extension of the intermontane arid Cul de Sac Plain) despite having been taken within a very few kilometers of the Dominico-Haitian border (near Fond Parisien in the Cul de Sac Plain, Haiti). Although widely distributed on the Tiburon Peninsula, large areas still remain whence *S. copei* is unknown.

The Península de Barahona and the associated southern foothills of the Sierra de Baoruco and the Massif de la Selle which border the xeric lowlands of the peninsula in the República Dominicana on the north have been revealing an interesting array of herpetological species which are limited to, or have their centers of distribution in, this arid region. This is surely

LIBRARY

1976

in part due to the fact that these lowlands are completely cut off in the north from other arid areas by the very mesic Sierra de Baoruco which reaches the shore along the east coast of the peninsula. Thus, animals on the Península de Barahona are "trapped" in and severed from their more northern relatives by the intervening massif of the Sierra de Baoruco; this "Barahona Entrapment" has played a significant role in the evolution of the amphibians and reptiles of the Península de Barahona, where such species as *Eleutherodactylus alcoae* Schwartz, *Leptotyphlops pyrites* Thomas, *Typhlops syntherus* Thomas, *Anolis longitibialis* Noble and *Ameiva leberi* Schwartz and Klinikowski are localized. A host of other reptiles, including amphisbaenids, lizards, and snakes, have subspecies which are endemic to this region.

The *Sphaerodactylus* of the Península de Barahona are poorly known. *S. difficilis randi* Shreve has been collected at Oviedo and its vicinity near the eastern coast of the peninsula, and at and near Pedernales on the Dominico-Haitian border on the west. A second unnamed species, with primarily Haitian distribution, crosses the border and occurs at Pedernales and in the Sierra de Baoruco at low to intermediate elevations. The high uplands of the Sierra de Baoruco are occupied by *S. armstrongi* Noble and Hassler. No *Sphaerodactylus* are known from the lowlands of the Península de Barahona between Oviedo in the east and Pedernales in the west, although the 65 kilometer distance between these two extremes seems eminently suitable for members of this genus. In the east, the peninsula was originally covered with fairly high canopied xeric forest on a rocky substrate; this forest was virtually destroyed by Hurricane Inez in 1966. Farther west, at about mid-peninsula, the road gradually ascends a forested limestone ridge; its western escarpment is steep and borders the very hot and dry plain on which Pedernales is situated in the westernmost corner. Much of the latter plain, as well as the limestone ridge, is rocky or rock-strewn and provides a suitable habitat for *Sphaerodactylus*. These same conditions persist onto the southern slopes of the Massif de la Selle above Pedernales and the Sierra de Baoruco above Cabo Rojo, but in both cases, despite often intensive search

and the taking of other cryptic or burrowing reptiles, no sphaerodactyls have been secured.

Between 20 and 24 March 1974, the junior author, with Sylvia Scudder and Fred G. Thompson of the Florida State Museum, collected in the region between Cabo Rojo and Pedernales. Their collections include two specimens of a new species of *Sphaerodactylus*, one of which is from the xeric lowlands of the Península de Barahona and the other from low elevations on the southern Sierra de Baoruco slopes. This new species is allied to the Haitian *S. copei*; the latter species (subspecies *enochrus* Schwartz and Thomas) occurs in southeastern Haiti from southwest of Jacmel and the Vallée de Trouin, east to the vicinity of Marigot, about 60 kilometers west of the Dominico-Haitian border. Thus there is a hiatus of about 75 kilometers between the known distributions of *S. copei* and the new species; since the extreme southeastern portion of Haiti remains unknown as far as sphaerodactyls are concerned, it is likely that one or the other species will be collected at Saltrou, Grand Gosier, or Anse-à-Pitre, all along the southeastern Haitian littoral. Although the new species is allied to *S. copei*, it differs in several trenchant characters and we have no doubt that it represents still another Península de Barahona endemic, derived from more western *S. copei*. For this new species, in honor of Dr. Thompson whose efforts were responsible for securing the two known specimens, we propose the name

***Sphaerodactylus thompsoni*, new species**

Holotype: UF/FSM (Florida State Museum, University of Florida) 21555, adult female, from 6 km SW Las Mercedes, 60 m, Pedernales Province, República Dominicana, taken 21 March 1974 by Fred G. Thompson. Original number FGT 1777.

Paratype: UF/FSM 21556, 11 km N, 2 km SE Cabo Rojo, Pedernales Province, República Dominicana, 23 March 1974, F. G. Thompson.

Diagnosis: A large species of *Sphaerodactylus* (snout-vent length 33 mm) with large keeled boss-like dorsal scales (17–18 between axilla and groin); small cycloid smooth ventral scales (32–33 between axilla and groin); no middorsal rows of small granular scales; females (only sex known) pale drab grayish above with complex head pattern (see illustrations), without dark collar and included ocelli or dark body bands with included ocelli, but with (in juveniles and very vaguely indicated in adults) three fine transverse black lines between axilla and groin,

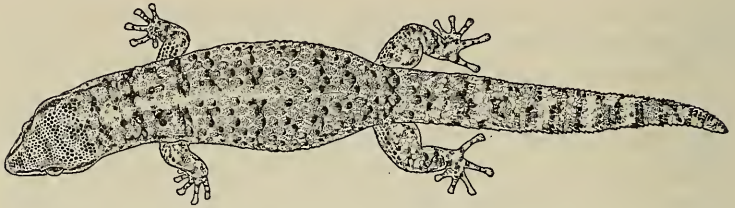


FIG. 1. *Sphaerodactylus thompsoni*, holotype, UF/FSM 21555, dorsal view.

anteriormost of these broadest and more or less attached to complex dark cephalic pattern.

Description of holotype: Dorsum (as preserved; not strongly different from life condition) very pale grayish or tan with dark brown head and body markings as follows. Head with median dark attenuate triangle on snout, its base anterior to eyes; dark canthal line extending through eye and auricular opening, with dark spot following it; dark marbling on upper lip, including dark spot below auricular opening; a transversely elongate hollow rectangle, its anterior side between posterior portions of eyes, its posterior margin at about level of mid-temple; another vague dark line connecting anterior corners of eyes; upper surface of neck with five brown spots (two lateral pairs and a median elongate blotch) followed by two transversely elongate markings, these in turn by an incomplete dark line across neck (the last three features all more or less united to and by dark dorso-lateral line which is the continuation of canthal-postocular line and blotch); very irregular and broken transverse line above forelimb insertions; remainder of dorsum with scattered dark scales that do not form a recognizable pattern; upper surfaces of all limbs and tail dotted with dark brown scales, those of tail forming a series of vaguely delimited rings which continue irregularly on underside of tail and are more complete distally; throat vaguely stippled with dark gray. Measurements and counts from holotype are: snout-vent length 33 mm; 17 large keeled boss-like dorsal scales between axilla and groin, 38 scales around body at midbody, 11 fourth toe lamellae, 2 internasal scales; 4/4 supralabial scales to mid-eye.

Variation: The paratype is a juvenile with snout-vent length of 19 mm, 17 dorsal and 38 ventral scales between axilla and groin, 38 scales around body at midbody, 10 fourth toe lamellae, 1 internasal, and 4/4 supralabials to mid-eye. Head pattern much as described for holotype except pre- and post-forelimb dorsal crossbands more clearly delimited, less fragmented and darker than all other markings on body, which in holotype speckled with dark scattered scales. Distinct dark crossband above hindlimb insertion. Tail has six pale grayish rings (becoming white distally) alternating with dark gray rings (becoming more complete ventrally distally); these dark rings somewhat paler centrally to

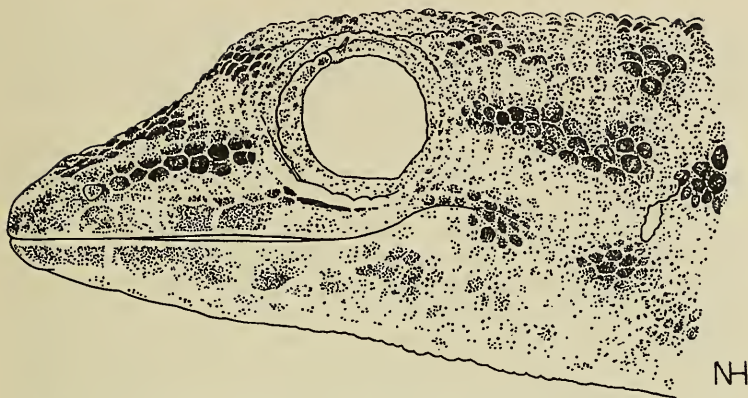


FIG. 2. *Sphaerodactylus thompsoni*, holotype, UF/FSM 21555, lateral view of head.

give series of dark gray edges bordering pale gray to white rings; tail tip black; some fine dark stippling on throat.

Comparisons: Comparisons of *S. thompsoni* with any species other than *S. copei* are unnecessary; the large boss-like and keeled dorsal scales immediately distinguish *S. thompsoni* from all other species in Hispaniola. From *S. copei*, the absence of a middorsal zone of small scales or granules distinguishes *S. thompsoni*. It is in pattern (and probably in coloration in life) also that the two species are radically different. Thomas (1968:fig. 2d) showed a dorsal view of *S. c. enochrus*. The head in that subspecies includes three pale lines on an otherwise dark brown ground, followed by two rows of subcircular or oval pale dots, followed by a dark collar with included pale ocelli. The body has two or three (usually two) dark crossbands with included pale ocelli in juveniles, but this pattern becomes, in adult females, a random series of dark and pale scattered scales on a medium dark (brown) ground. Considering the illustrations of the other subspecies (Thomas, 1968) as well as the verbal descriptions of subspecies subsequently named (Schwartz, 1975), one can see that no other population of *S. copei* approaches *S. thompsoni* in complete reduction of dark collar and included ocelli (although the ocelli may be present but not in a dark collar); in addition, the fine dark isolated juvenile crossbands in *S. thompsoni* differ strongly from the broad crossbands with their included ocelli in *S. copei*.

None of the meristic characteristics of *S. thompsoni* differentiates the species from *S. copei enochrus*. In 33 specimens of *S. c. enochrus* examined, the largest female has a snout-vent length of 39 mm, larger than the single adult female *S. thompsoni*. Dorsals in axilla to groin distance are 13–18 in *S. c. enochrus*, 17–18 in *S. thompsoni*; ventrals in the same distance are 23–31 in *S. c. enochrus*, 32–33 in *S. thompsoni*;

midbody scales in *S. c. enochrus* are 38–45 and 38 in both specimens of *S. thompsoni*. No *S. c. enochrus* has 2 internasals (although this condition occurs in two subspecies (*picturatus* Garman, *websteri* Schwartz), whereas one of two *S. thompsoni* has 2 internasals. Both taxa normally have 4 supralabials to the center of the eye.

Remarks: The holotype was taken under rocks near the top of a small talus cone, about 12 feet (3.7 m) above the base. The cone consisted of loosely packed limestone rocks up to 2 feet (0.6 m) in diameter and covered lightly with dry leaves. The cone was located against one wall of a rather steep-sided ravine or wash, the floor of which was made up of fine sediments and some cobble. The opposite wall consisted of ledges of limestone with shallow dry caves occupied by *Cyclura*. The vegetational cover was sub-mesic in the ravine with xeric conditions (*Agave*, *Acacia*, cacti) on the upper slopes and surrounding hillsides. There are no further data on the collection site of the paratype. We assume that *S. thompsoni* is widely distributed on the Peninsula de Barahona. The habitat noted above is widespread and rocky and talus cover are commonplace throughout the area. It is truly remarkable, despite intensive collecting in this region since 1963, that the species has not been previously collected. Since Dr. Thompson was collecting living snails in this xeric region, he made a point of disturbing and tearing apart talus and rubble piles; this activity may have been responsible for taking of the two specimens, since mere rock turning has repeatedly yielded no *Sphaerodactylus* on the peninsula. In those areas where other species of *Sphaerodactylus* have been locally taken (Oviedo; Pedernales; and their vicinities) the ecology is regularly less harsh, more shaded, and somewhat more mesic than in those rigorous localities whence *S. thompsoni* has been collected.

ACKNOWLEDGMENTS

We wish to thank Dr. Fred G. Thompson for allowing us to describe this distinctive new species, and Nancy Halliday, the staff artist at the Florida State Museum, for her beautiful illustrative work. Comparative specimens of *S. c. enochrus* in the collection of the senior author were taken through the efforts of James W. Norton, William W. Sommer and Richard Thomas.

LITERATURE CITED

- THOMAS, R. 1968. Notes on Antillean geckos (*Sphaerodactylus*). *Herpetologica* 24(1):46–60, Figs. 1–4.
- SCHWARTZ, A. 1975. New subspecies of *Sphaerodactylus copei* Steindachner (Sauria, Gekkonidae) from Hispaniola. *Herpetologica* 31(1):1–18.